REMARKS

The Specification and Claims have again been reviewed for typographical and grammatical errors. A previously undetected typographical error on page 6 involving an un-subscripted index was discovered, and its correction has been requested. The change makes the index have the same form widely used for corresponding elements throughout the Specification as filed, and it is therefore believed that the requested correction adds no new matter whatsoever.

It will be noted that Claim 1 has been amended. The reason for this amendment is a voluntary urge on the part of applicants to clarify their use of the term "compensate" in the context of this case, and was NOT done to avoid cited prior art. That this is so will argued after the traverse of the cited art, as an understanding of that art will clearly be useful in that connection. Briefly, trouble is that the term"compensate" is blunt instrument, and there is, upon reflection, a tendency when considering resistive dividers plagued with stray capacitance to think in terms of compensated attenuators, such as are used in 'scopes and AC voltmeters. Our Specification does recognize this and sets out the difference between "attenuator style" compensation and that which the claimed structure accomplishes, but didn't give the latter a new name. The structure is well set out in the Claims, but its different-than-attenuator-style-compensation effect was left un-recited. It is a recitation of that different effect that has been added to the Claims. That is, language was added to Claim 1 that recites further cooperation between the (already) recited elements.

In this connection, we earnestly urge the Examiner to avail himself of the material at line 26 of page 7 in the Specification, through line 20 of page 9. Here the Examiner will find a discussion of "attenuator style" compensation for the divider at issue, as well as a comparison and contrasting of "attenuator style" with the "unnamed style" that the claimed structure does -- and they are indeed different, although not mutually exclusive. To appreciate this statement, note that both types are shown as present in Figure 2: C1 and C2 (solid lines) are part of the "compensated attenuator" idea, while the dotted line Cs are part of this 'other thing' that we never did give a separate name to. [Actually, it (the other, unnamed, thing) resembles a 'guarded' input, although that trick was used in voltmeters and bridges to reduce apparent input C by using a replica of the input (obtained from an auxiliary amplifier and applied to a separate Guard input terminal) to drive the C-to-ground of the guard enclosure, and in the process reducing the (stray) C from input circuits to guard to almost nothing (same voltage on both plates of the stray capacitor ...), while the guard intervened between the input circuits and ground (you can't have capacitance to something you are shielded from ...). So, the separate guard signal takes the hit (drives all that C), rather than the input signal. Our technique does not reduce apparent input C (and is therefore not a guard), and we assume that the input voltage (sans a replica!) applied to the claimed divider is gutsy enough to drive the whole works. It's good frequency response that we want, and the 'user' simply has to supply a signal that will drive the divider and not be loaded by it.]

Furthermore, in light of the material at line 26 of page 7 in the Specification, through line 20 of page 9, it will be abundantly clear that the clarifying amendment to Claim 1 introduces no new matter whatsoever.

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As an aid in citing locations in a reference, let us adopt the following notational convention: lines 19 through 33 in col. 4 of Johansson are referred to as Johansson @ 4:19 - 33. When it is clear that Johansson is the reference under consideration, we can simply say 4:19 - 33, and if only line 25 is needed, 4:25. Also, Johansson @ 3:59 - 4:2 will be appreciated as indicating line 59 of col. 3 through line 2 of col. 4.

Turning now to the action on the merits, Claims 1 and 2 were rejected as anticipated under 35 USC 102(b) by Johansson (USP 5,907,180). This rejection is traversed for the reasons set out below.

To begin, let us agree that the Figure I below (at the top of the next page) is a fair and honest representation of the subject matter of Claim 1 (as amended or not, although the names of the distributed capacitances are of the as amended form). What we note is that around the periphery of the substrate are three terminals. The figure shows the ground that is at one end of the distributed stray capacitance as being off the substrate; the claim does not say where the ground is, and it really does not matter if it is on or off the substrate. (Absent some readily familiar notational device for depicting the general case, we just made the figure as shown.)

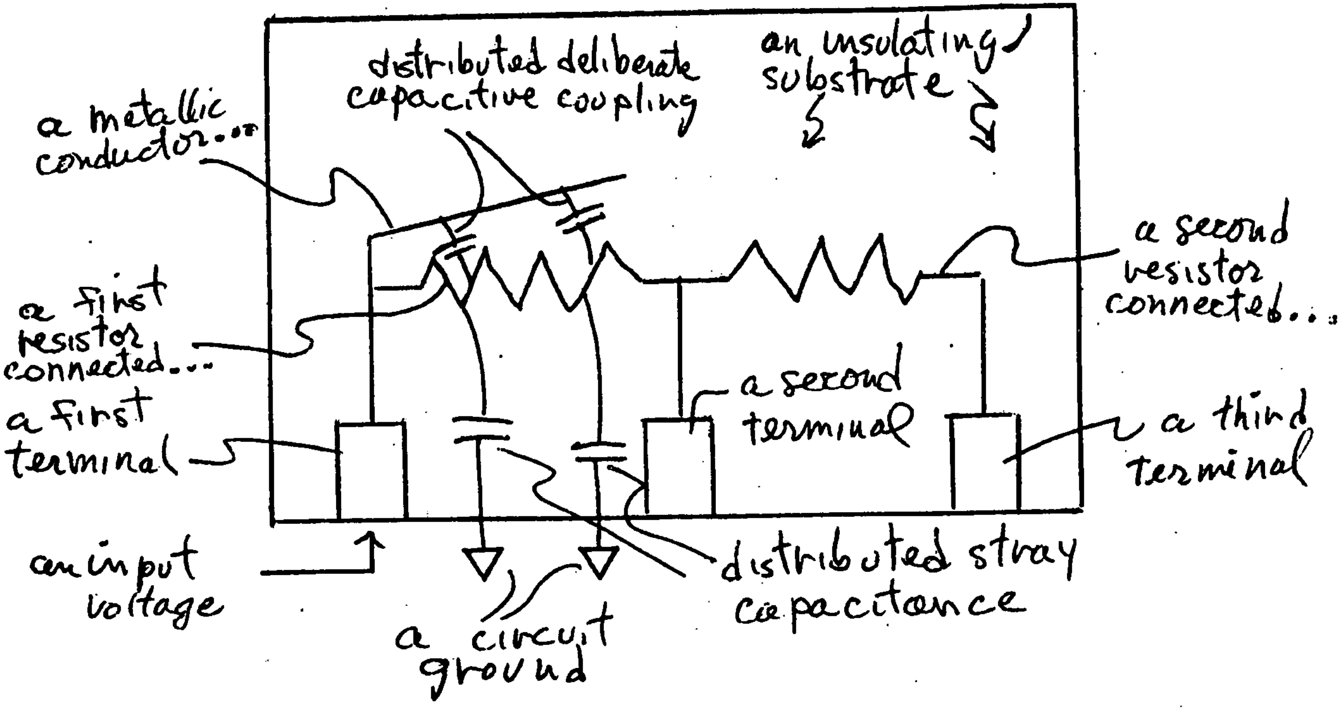
distributed deliberate capacitive coupling
an insulating substrate
a metallic conductor...
a second resistor connected...
a first resistor connected...
a second terminal
a first terminal
a third terminal
an input voltage
distributed stray capacitance
a circuit ground

Figure I. A Structure According To Claim 1.

Johansson deals with a fabrication, or layout, technique for RF power transistors that cooperates with a method for controlling their operation. After describing three basic layout techniques, he describes what he wants to do with emitter ballast resistors used to achieve the desirable results set out at 2:13 - 18. Ultimately, he wants to monitor (and subsequently influence with a servo -- but we don't need to go there) the current in the transistor, but do so without disturbing the environment used to operate that transistor. His technique is to create a scaled replica of the transistor's current by fabricating on the same die an 'auxiliary' transistor (our term) whose behavior can be monitored to make an inference concerning what is going on in the 'main' transistor (also our term), and without that main transistor ever knowing about it. Both the main and auxiliary transistors will have the benefit of the good emitter ballast technique.

Now let us do the same manner of characterization in Figure II for Johansson as was done in Figure I. We shall pick the interdigitated example of his Fig's 1 and 2, as they are the basis for his further examples that actually depict the emitter ballast resistors. We note that the Examiner settled on Fig. 6 of Johansson, which is instead for a mesh technique of power transistor layout. Other than perhaps the mesh technique being a bit harder to visualize, and that Johansson proceeds using the interdigitated technique for the addition and subsequent use of emitter ballast resistors, the three

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techniques (interdigitation, overlay and mesh) are believed to be equivalent for our present purposes. Johansson says as much for his purposes at 3:53 - 55. So, like Johansson, we shall proceed with just a Figure II, and for brevity dispense with a Figure III or IV for the other two techniques. It will become clear that an analysis of such figures would still produce the same result.

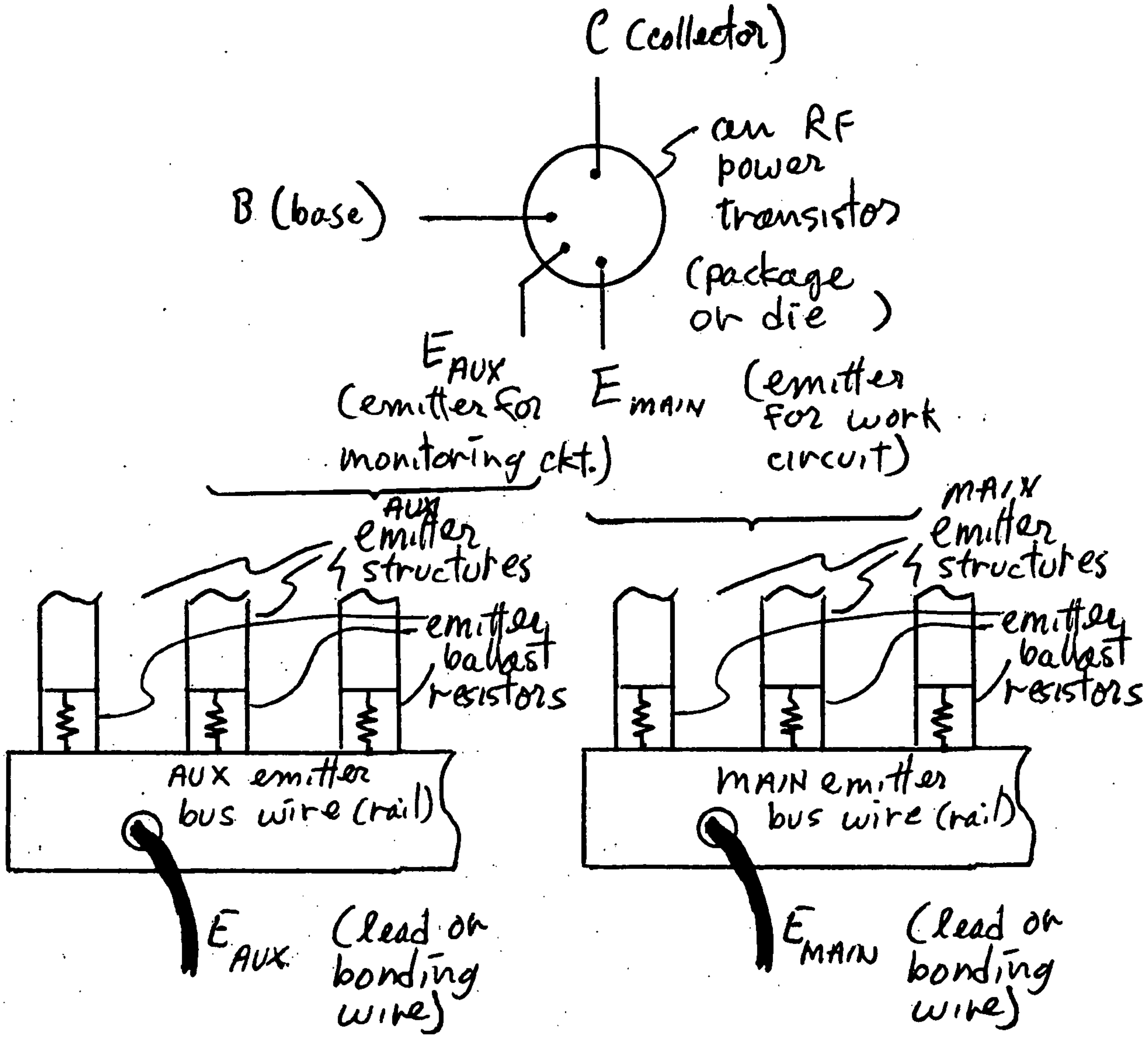
C (collector)
an RF power transistor (package or die)
B (base)
E_{AUX} (emitter for monitoring ckt.)
E_{MAIN} (emitter for work circuit)
AUX emitter structures
emitter ballast resistors
MAIN emitter structures
emitter ballast resistors
AUX emitter bus wire (rail)
MAIN emitter bus wire (rail)
E_{AUX} (lead or bonding wire)
E_{MAIN} (lead or bonding wire)

Figure II. A Structure According To Johansson.

Note at the outset that applicants' claimed structure requires three terminals and two resistances connected two pairs of those terminals. No matter how this is done, the two resistors are in series: not in parallel (uses only two terminals) or isolated from each other (uses four terminals). So, however we are to construe Johansson, we need to find resistors that are in series. One end (the first terminal) of the two resistors that is not also the common connection (second terminal) is also the origin for a metallic conductor disposed to be adjacent to at least a part of the first resistor. Johansson hasn't got any 'extra' conductors to do what applicants' metallic conductor does (the distributed deliberate capacitive coupling), so if Johansson is to have that, it will have to be a re-use of something that is already there ... .

So, can Johansson be rearranged to look like Figure I ? There are two levels at which this might be attempted, and the answers are "NO" and "NO."

The first level is to construe Johansson's power transistor as a unit having four terminals, and then ask if, using any of those four (C, B, E_{aux} and E_{main}) as counterparts to the claimed first, second and third terminals, is there inside the transistor the rest of the claimed stuff. The answer to this question is clearly "NO," as Johansson does not describe a transistor with a (deliberate, we put it there on purpose...) resistor between, say, C and B, nor B and either E, nor either E and C, etc. The reason for this is simple: NONE OF THE EMITTER BALLAST RESISTORS ARE CONNECTED BETWEEN A PAIR OF THE C, B AND E TERMINALS! It is clear that it is not necessary at this level to advance further, and attempt to locate the metallic conductor and its deliberate distributed capacitive coupling.

The second level of analysis is to dive into the transistor proper, and root around amongst the two emitter structures, and see what turns up. So, can an emitter bus wire (either one) be a second terminal, serving as a common point of connection between two emitter ballast resistors? Well, yes, it could. That would make the metal contacts for two emitter structures be the first and third terminals. So how is either of those to receive an input signal ?? They don't have leads bonded to them ... . And then, where is the metallic conductor ? It seems all we have left is to use another emitter structure, but it is not 'connected' to the first terminal: IT IS INSTEAD CONNECTED TO THE SECOND (OR THE THIRD) BY A BALLAST RESISTOR!! It seems that no matter how you do it, Johansson cannot be parsed to anticipate the structure claimed in Claim 1.

Furthermore, once the metallic conductor has been introduced in the claim, Claim 1 goes on to recite some rather specific distributed capacitances. The Examiner addresses this by saying " ... A metallic conductor (please refer to fig. 6) is formed on the substrate to distribute stray capacitance." Hmmm. It seems to us that the Examiner has not appreciated the nature of the technical effect that is being achieved. We refer again to the afore-mentioned discussion in the Specification at pages 7 through 9. Were is anything like that in Johansson? It is true that nearly every electronic circuit has stray C. But reading his Patent carefully, we note that he mentions the notion of capacitance in just two places. At 1:43 - 47 he says "Interdigitated, overlay and mesh structures have been used to reduce ... parasitics (☜C??), to handle ... , and to provide heat spreading." None of Johansson's interdigitated, overlay nor mesh structures involves the use of the claimed metallic conductor that is " formed on the insulating substrate, connected at one end to the first terminal, disposed to be adjacent to at least part of the first resistor and having a distributed ... capacitive coupling thereto ...". It just isn't there. Nor is there any sense to such a thing in Johansson. Is he trying to get rid of *emitter to emitter* capacitance? He doesn't say so. Nor does he mention emitter to ground capacitance. (Actually, at 4:10 - 12 he says the emitter lead of the main transistor is grounded ... .) The other mention is at 4: 26 and 4:34, where he makes references to capacitor C in the servo circuit of his Figure 10. This "capacitor C' is not anywhere on the map in terms of the stuff in Figure II. At 4:30 he says that "... The output of the op-amp is connected through a resistor R_b to a base lead of the transistor package." Thus, it is not on the substrate, nor part of the transistor! **This "C" in no way corresponds to either of the distributed capacitances recited in Claim 1.** Thus, neither the "parasitics" nor the "C" in Johansson are the claimed metallic conductor and its distributed deliberate capacitance.

On the basis of the foregoing arguments, two things are clear: First, Johansson does not anticipate either Claim 1 (as amended) or Claim 2. Second, Johansson would not anticipate Claim 1 as originally filed (with the attendant implication that the amendment to Claim 1 is not for the purpose of overcoming a cited reference).

Thus, on the basis of the arguments set out above, claims 1 and 2 are believed to comply with 35 USC 102(b), and the Examiner is respectfully, but earnestly, urged to withdraw the rejection.

Re-examination is requested, and favorable action is respectfully solicited.

Respectfully submitted,
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14 April 2006
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